

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for *Pityopsis Ruthii* (Ruth's Golden Aster)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines *Pityopsis ruthii* (Small) Small (Ruth's golden aster), a plant endemic to Polk County, Tennessee, to be an endangered species under the Endangered Species Act of 1973 (Act), as amended. *Pityopsis ruthii* is endangered by water quality degradation, toxic chemical spills, and water level and flow regime alterations, and potentially from trampling associated with recreational use of its habitat. This action will implement the protection provided by the Act for *Pityopsis ruthii*.

DATE: The effective date of this rule is August 19, 1985.

ADDRESS: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Asheville Endangered Species Field Station, U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801.

FOR FURTHER INFORMATION CONTACT: Mr. Robert R. Currie, at the above address (704/259-0321 or FTS 672-0321).

SUPPLEMENTARY INFORMATION:**Background**

Pityopsis ruthii, a member of the Asteraceae (Aster family), was first collected by Albert Ruth, A Knoxville botanist, near the Hiwassee River in Polk County, Tennessee. Ruth often visited this area between 1894 and 1902 and collected this unusual plant on several occasions (Bowers, 1972a). J.K. Small (1897) named the species in honor of Ruth, including it in the genus *Chrysopsis* in his original description. In 1933, Small transferred the species to the genus *Pityopsis*. Several alternative taxonomic treatments have been proposed for this and associated species (Harms, 1969; Bowers, 1972b; Cronquist, 1980; Semple *et al.*, 1980). Regardless of which genus (*Pityopsis*, *Heterotheca*, or *Chrysopsis*) the species is included in, all authors have recognized the specific distinctness of this unique plant. The inclusion of this species in the genus *Pityopsis*, as advocated by Semple *et al.*

(1980), is widely supported and is followed here.

Following Ruth's original collections, *Pityopsis ruthii* was not collected again for almost 50 years. Harms (1969) speculated that the species might be extinct. Bowers (1972a) reported that *Pityopsis ruthii* had been rediscovered on the Hiwassee River by himself and two other Knoxville botanists and stated that W.J. Dress had also collected the species in 1953. The Dress collection had not been reported in the literature, and his collections were housed in herbaria outside the region. This resulted in a 19-year lapse in knowledge of Dress' discovery. In 1976, A. White discovered a small population of *Pityopsis ruthii* on the Ocoee River, Polk County, Tennessee (White, 1978). Despite searches of apparently suitable habitat on the adjacent Tellico and Conasauga River systems by White (1977) and Wofford and Smith (1980), *Pityopsis ruthii* is only known to occur on short reaches of the Ocoee and Hiwassee Rivers.

Pityopsis ruthii is a fibrous-rooted perennial which grows only in the soil-filled cracks of phyllite boulders in and adjacent to the Ocoee and Hiwassee Rivers. The stems are from one to three decimeters tall and bear long narrow leaves covered with silvery hairs. The yellow flower heads appear in a paniculate inflorescence in late August and September. The fruits (achenes) develop a few weeks after the flowers fade (Wofford and Smith, 1980).

Federal actions involving *Pityopsis ruthii* began with Section 12 of the Endangered Species Act of 1973, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document No. 94-51, was presented to Congress on January 9, 1975. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its acceptance of the report of the Smithsonian Institution as a petition within the context of former section 4(c)(2) (now section 4(b)(3)(A), as amended) of the Act and of its intention thereby to review the status of those plants. On June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine approximately 1,700 vascular plant species to be endangered species pursuant to Section 4 of the Act. *Pityopsis ruthii* was included in the Smithsonian petition and the 1976 proposal. General comments received in relation to the 1976 proposal were summarized in an April 26, 1978,

Federal Register publication (43 FR 17909).

The Endangered Species Act Amendments of 1978 required that all proposals over two years old be withdrawn. A one-year grace period was given to proposals already over two years old. In the December 10, 1979, **Federal Register** (44 FR 70796), the Service published a notice of withdrawal of that portion of the June 16, 1976, proposal that had not been made final, along with four other proposals that had expired. *Pityopsis ruthii* was included as a category 1 species in a revised list of plants under review for threatened or endangered classification published in the December 15, 1980, **Federal Register** (45 FR 82480). Category 1 comprises taxa for which the Service presently has sufficient biological information to support their being proposed to be listed as endangered or threatened species.

The Endangered Species Act Amendments of 1982 required that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. The species listed in the December 15, 1980, notice of review were considered to be petitioned, and the deadline for a finding on those species, including *Pityopsis ruthii*, was October 13, 1983. On October 13, 1983, and October 13, 1984, the Service found that the petitioned listing of *Pityopsis ruthii* was warranted, but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act. Notice of the 1983 finding was published in the **Federal Register** on January 20, 1984 (49 FR 2485). On November 20, 1984, the Service published, in the **Federal Register** (40 FR 45766), a proposal to list *Pityopsis ruthii* as an endangered species. That proposal constituted the next one-year finding as required by the 1982 Amendments to the Endangered Species Act. The proposal provided information on the species' biology, status, and threats, and the potential implications of listing. The proposal also solicited comments on the status, distribution, and threats to the species.

Summary of Comments and Recommendations

In the November 20, 1984, proposed rule (49 FR 45766) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice was

published in the *Cleveland Banner* on December 12, 1984, which invited public comment. Five supporting comments were received in response to the **Federal Register** and newspaper notifications. The comments are summarized below.

The U.S. Department of Agriculture, Forest Service Regional Office in Atlanta stated that *Pityopsis ruthii* merits listing as an endangered species. The forest supervisor for the Cheokee National Forest stated that publicity (associated with designation of critical habitat) is likely to attract attention to the plant and make protection efforts more difficult. It was further stated that this species, which occurs on the Cherokee National Forest, has been treated by the Forest Service as a sensitive species since 1981.

The Tennessee Department of Conservation, Ecological Services Division, supported listing *Pityopsis ruthii* as an endangered species, provided additional information about the threats to this species, and provided recent information on the status of the Ocoee River population.

Two comments, one from a private organization and the other from a private individual, supported listing *Pityopsis ruthii* as an endangered species.

The Tennessee Valley Authority (TVA) was provided a copy of the November 20, 1984, proposed rule on November 27, 1984. Although that agency made no official comments during the formal comment period, it did provide, in a letter dated February 6, 1984, information concerning the existing environmental conditions in the reaches of the Ocoee and Hiwassee Rivers occupied by *Pityopsis ruthii*. The information provided has been incorporated into the appropriate sections of this rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Pityopsis ruthii* should be classified as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 et seq.) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Pityopsis ruthii* (Small) Small (Ruth's golden aster) [SYN: *Chrysopsis ruthii* Small and *Heterotheca ruthii* (Small) Harms] are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range. The two known populations of *Pityopsis ruthii* occur on short reaches of rivers in which water regimes are controlled by upstream dams. The dams are operated by the Tennessee Valley Authority. Natural water flows in the Hiwassee River, through the area where the species occurs, have been essentially eliminated since construction of the Appalachia Dam in 1943 (White, 1977). Water usually bypasses this area through a large pipeline between the dam and the powerhouse that is located several miles downstream of the dam. Apart from temporary releases to flush toxic chemical spills from the river or to release excess water after heavy upstream rainfall, the prime source of water for this river reach is inflow from small tributaries and surface runoff from the adjacent slopes (Wofford and Smith, 1980; Parrish, 1981). Rivers (1985) stated that releases due to high water above Appalachia Dam have occurred an average of 19 times per year since the dam was built in 1943. This alteration of natural flow cycles with a significant reduction of the annual scouring of boulders on which *Pityopsis ruthii* grows has permitted more competitive species to invade the boulders and encroach and overshadow the riverbanks (White, 1977). Somers (1985) reported that the Hiwassee River population has been reduced by approximately 50 percent in the past eight years. *Pityopsis ruthii* has little shade tolerance and is replaced by other species when sunlight is reduced (Wofford and Smith, 1980; White, 1977). If present trends continue it would appear that *Pityopsis ruthii* will eventually be displaced from the Hiwassee River by more shade-tolerant species. *Pityopsis ruthii* has adapted to and is not displaced by the normal high water flows that periodically scour the rocks and riverbanks and remove the more competitive vegetation.

The Ocoee River population of fewer than 500 plants (Wofford and Smith, 1980) appears to be subject to detrimental impacts of abnormally high flows during the growing season. Present water management on the Ocoee River results in regular releases during the growing season that approximate the historical average annual flow on this reach of the river (Rivers, 1985). However, periodic low (summer) and high (spring) flows have been eliminated. Although periodic high flows appear to be essential for maintenance of *Pityopsis ruthii* habitat, the higher than normal flows on the

Ocoee River during the growing season may be exceeding the species' capability to withstand this normally beneficial action. A closer correlation between water management and the needs of *Pityopsis ruthii* is needed, if the species is to survive on the Ocoee River.

Current recreational use of the Hiwassee River is limited to hiking and fishing on the banks adjacent to the *Pityopsis ruthii* population. Current levels of activity do not appear to be adversely affecting the species. Should levels of these activities increase in the future, they could threaten the species if they are not managed in a way that minimizes direct impacts such as trampling. Recreational use of the Ocoee River primarily consists of white-water sports like rafting. Since this activity takes place in the river, it would not appear to be impacting *Pityopsis ruthii* at this time. Observers and photographers of these white-water activities have trampled this species in the past (Collins, 1984).

B. Overutilization for commercial, recreational, scientific, or educational purposes. *Pityopsis ruthii* is not currently in commercial trade as an ornamental plant. However, Farmer (1977) indicates that the species has excellent potential for horticultural use and public awareness of the species could generate a demand.

C. Disease or predation. Not applicable to this species at this time.

D. The inadequacy of existing regulatory mechanisms. The State of Tennessee recently passed the Tennessee Rare Plant Protection Act of 1985; implementing rules and regulations will soon be developed and it is anticipated that at that time *Pityopsis ruthii* will be offered some protection by this new legislation. The Tennessee Department of Conservation recognizes Ruth's golden aster as endangered in its current (1984) revision of the Official Rare Plant List of Tennessee issued pursuant to the Governor's Executive Order on March 7, 1980, and compiled with the assistance of a scientific advisory committee and with other public input. Removal of plants without a permit from the Cherokee National Forest is prohibited by regulation. However, this regulation is difficult to enforce. The Endangered Species Act will provide additional protection for the species.

E. Other natural and manmade factors affecting its continued existence. Water quality in the Ocoee River is drastically reduced on a regular basis because of mining activities in the Copperhill area, upstream of the *Pityopsis ruthii* population. Sediment levels are generally high, and acidity levels as low

as pH 1.2 have been recorded in the Ocoee River (White, 1977). These water quality problems have adversely impacted the aquatic fauna of this reach of the Ocoee River and are probably adversely affecting the *Pityopsis ruthii* population. Several spills of toxic chemicals (sulfuric acid) have occurred on the Hiwassee River. In order to flush these chemicals from the river, releases from Appalachia Dam have been made. These releases have resulted, on at least one occasion (1976), in a loss of seed production for the year (White, 1977).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Pityopsis ruthii* as endangered. With only two populations of this species known to exist, it definitely warrants protection under the Act; endangered status seems appropriate because of the threats facing both populations. Critical habitat is not being designated for reasons discussed in the next section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Pityopsis ruthii* at this time. The species has high potential for horticultural use (Farmer, 1977). Increased publicity and the provision of specific location information associated with critical habitat designation could result in taking pressures on Ruth's golden aster. Although removal and reduction to possession of endangered plants from lands under Federal jurisdiction is prohibited by the Endangered Species Act, such provisions are difficult to enforce effectively. Publication of critical habitat descriptions would make *Pityopsis ruthii* more vulnerable and would increase enforcement problems for the U.S. Forest Service. Increased visits to both populations stimulated by critical habitat designation could also result in trampling problems. Both of the Federal agencies involved in managing the habitat of Ruth's golden aster have been informed of the locations of this species and of the importance of protecting it, so no additional benefits from the notification function of critical habitat designation would result. Therefore, it would not be prudent to determine critical habitat for *Pityopsis ruthii* at this time.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against removal and reduction to possession are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The U.S. Forest Service (Cherokee National Forest) and the Tennessee Valley Authority (TVA) have jurisdiction over this species' habitat or essential components of its habitat. Federal activities that could impact *Pityopsis ruthii* and its habitat in the future include, but are not limited to, the following: Management of flow regimes and water levels on the Ocoee and Hiwassee Rivers, timber harvesting, recreational development, channel alterations, road and bridge construction, permits for mineral exploration, and implementation of forest management plans. It has been the experience of the Service that the large majority of section 7 consultations are resolved so that the species is protected and the project can continue.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that

apply to all endangered plant species. With respect to *Pityopsis ruthii*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits will be sought or issued since Ruth's golden aster is not common in cultivation or in the wild.

Section 9(a)(2)(B) of the Act, as amended in 1982, prohibits the removal and reduction to possession of endangered plant species from areas under Federal jurisdiction. This prohibition now applies to *Pityopsis ruthii*. Permits for exceptions to this prohibition are available through section 10(a) of the Act (revised regulations are being developed for the issuance of removal or reduction to possession permits) *Pityopsis ruthii* is only known to occur on lands administered by the Forest Service and TVA, but it is anticipated that few collecting permits will be requested for this species. Requests for copies of the current regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-1903).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of

1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References

- Bowers, F.D. 1972a. The existence of *Heterotheca ruthii* (Compositae). *Castanea* 37:130-132.
- Bowers, F.D. 1972b. A biosystematic study of *Heterotheca* section *Pityopsis*. Ph.D. Dissertation, University of Tennessee, Knoxville, TN. 188 pp.
- Collins, L. 1984. Personal communication by telephone to Robert R. Currie (Biologist with the Asheville Endangered Species Field Station) concerning threats to the Ocoee River population of *Pityopsis ruthii*.
- Cronquist, A. 1980. Vascular flora of the southeastern United States. Vol. 1. Asteraceae. University of North Carolina Press, Chapel Hill, NC. 281 pp.
- Farmer, R.E., Jr. 1977. Seed propagation of *Heterotheca ruthii*. *Castanea* 42:146-148.
- Harms, V.L. 1969. A preliminary conspectus of *Heterotheca* section *Pityopsis*. *Castanea* 34:402-409.
- Heifetz, J., and W.L. Milstead. 1979. Status report for *heterotheca ruthii*. Unpublished report by Southeast Region, U.S. Fish and Wildlife Service, Atlanta, GA. 14 pp.
- Parrish, L.L. 1981. Personal communication by letter to Mr. Dick Biggins (Biologist with the Endangered Species Field Station in Asheville, North Carolina) regarding river flows in the Hiwassee River.
- Rivers, M.E. 1985. Personal communication by letter to Mr. W.T. Parker (Field Supervisor, Endangered Species Field Station, in Asheville, North Carolina) concerning river flows in the Hiwassee and Ocoee Rivers.
- Semple, J.C., V.C. Blok, and P.P. Heiman. 1980. Morphological, anatomical, habit and habitat differences among the golden aster genera *Chrysopsis*, *Heterotheca*, and *Pityopsis* (Compositae—Asteraceae). *Canadian Journal of Botany* 58:147-163.
- Small, J.K. 1897. Studies in the botany of the Southeastern United States. XII. Bulletin of the Torrey Botanical Club 24:493.
- Small, J.K. 1933. Manual of the Southeastern flora. Published by the author, New York, NY. p. 1341.
- Somers, P. 1985. Personal communication by letter to Mr. W.T. Parker (Supervisor, Asheville Endangered Species Field Station) concerning the proposal to list *Pityopsis ruthii* as an endangered species.

- White, A.J. 1977. An autecological study of the endangered species, *Heterotheca ruthii* (Small) Harms. M.S. Thesis. University of Tennessee, Knoxville, TN. 73 pp.
- White, A.J. 1978. Range extensions of the proposed endangered plant, *Heterotheca ruthii* (Compositae). *Castanea* 43:263.
- Wofford, B.E., and D.K. Smith. 1980. Status report for *Heterotheca ruthii* (Ruth's golden aster). Unpublished report prepared under contract for the U.S. Fish and Wildlife Service, Atlanta, GA. 33 pp.

Author

The primary author of this final rule is Mr. Robert R. Currie, Endangered Species Field Station, U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 8/672-0321). Preliminary status information was provided by Mr. J. Heifetz and Dr. W.C. Milstead, formerly of the Service's Southeastern Regional Office, Atlanta, Georgia.

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Regulation Promulgation

PART 17—[AMENDED]

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 [16 U.S.C. 1531 *et seq.*].

2. Amend § 17.12(h) by adding the following, in alphabetical order under the family Asteraceae, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

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(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Asteraceae—Aster family:						
<i>Pityopsis ruthii</i> (SYN: <i>Heterotheca ruthii</i> , <i>Chrysopsis ruthii</i>)	Ruth's golden aster	U.S.A. (TN)	E	189	NA	NA